July 20, 1964

[redacted] STAT
[redacted] STAT

SPECIFICATIONS

[redacted] COUNTERS TO INTERFACE STAT

WITH

[redacted] COMPARATOR STAT

A AND B SIGNAL REQUIREMENTS

Amplitude of Pulses

Positive going level change from (-) 9.6 to (-) 7.0 volts

Pulse Duration

1 microsecond up to six microseconds, to operate between frequencies ranging from one pulse an hour to 100,000 pulses per second

Rise Time

Can accept rise time up to five microseconds

Input Impedance

10,000 ohms minimum

Type of Count

Bi-directional and non complimentary

Direction of Count

Normal or reversed

Input Power Requirements

115 volt AC, 50-60 cycles per second

Accuracy

Absolute

Stability

The counter shall not generate any internal pulses which would change the reading of the counter by more than two (2) counts in a twelve (12) hour period

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IN-PLANT
ACCEPTANCE TEST PROCEDURE
For
"X" - "Y" STEREO CHIP COMPARATOR

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[redacted]

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1.0 SCOPE

This document covers the acceptance test procedure to determine compliance with the requirements of the Stereo Chip Comparator.

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2.0 APPLICABLE DOCUMENTS

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[redacted] Quality Control Manual

Inspection Reports [redacted]

3.0 TEST FACILITY

In-plant acceptance tests specified herein shall be conducted at the test facility, located at the following address:

[redacted]

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6.9 A small illuminated spot is provided by a secondary projection system directly under the microscope objective in order to enable the operator to add to the ambient light of the large projection system. This spot can also be changed in color value. STAT

6.10 The stereo zoom microscope has sufficient vertical adjustment to accommodate various powers of magnification.

6.11 The "X" and "Y" tables are provided with two-speed drives, operated by co-axially designed handwheels in such manner as to avoid physical contact of the operator with the "X" and "Y" table.

7.0 INSTRUMENT REQUIREMENT (Functional)

The prime purpose of this instrumentation is to measure distances between two (2) points located within the 4.25 inch x 4.25 inch observation area within an accuracy of ± two (2) micron by means of two (2) interferometers, one for the "X" axis and one for the "Y" axis. The output of these interferometers is accepted by a digital counter for each axis. The repeatability of these readings shall be within ± two (2) microns. This accuracy is checked by the reading obtained from a grid covering the entire area of required observation. It shall be pointed out here, that one micron represents four (4) counts on the digital representation and our tolerance is equivalent to ± eight (8) counts. For check-out purposes, two (2) test sheets are hereby attached; one for "X" axis readings, and one for "Y" axis readings.

4.0 TEST EQUIPMENT

As this instrumentation is a homogeneously designed unit, the only additional test equipment required is a grid test plate to check repeatability of measurement over a part or all of the measurable area in steps of 0.5 inches in conjunction with the [redacted] Stereo Microscope Reticle.

5.0 TEST CONDITIONS

For the purpose of these acceptance tests, the following conditions apply at [redacted] plant:

Record

Temperature	78°F
Relative Humidity	40%

6.0 INSTRUMENT REQUIREMENTS (Visual)

By visual inspection, verify the following:

6.1 All parts and accessories are manufactured and finished in a thorough workmanlike manner, in accordance with best commercial practice. ✓

6.2 The instrumentation consists of three basic items, the Stereo Chip Comparator, the Control Console and the Vacuum Pump Unit. ✓

6.3 The Stereo Chip Comparator is equipped with an "X" and a "Y" Measuring Table. ✓

[redacted]

6.4 Both Tables have sufficient freedom of travel to allow visual observation and measurements over an area of 4.25 inches x 4.25 inches from two (2) 5 inch x 5 inch film chips through the use of a Stereo Zoom Microscope and an "X" and a "Y" Interferometer. 0.37 ÷ 4.71 = app. 4.44"

[redacted]

6.5 The film chips are held down individually by vacuum which can be independently controlled from the [redacted] Control Panel.

6.6 The right hand film chip holder can be placed in any position with respect to the left hand stereo chip holder within the practical area of observation up to an angular position of ± 180 degrees and can be firmly locked in place by vacuum application, independently controlled from the [redacted] Control Panel. This holder is also provided with a fine adjustment by means of micromatic screws. This adjustment is independent of vacuum application.

Adjustment ± 0.5" in two axes [redacted]

6.7 Each film chip area is individually illuminated, the intensity of each is controlled from the [redacted] Control Panel.

Illuminated area 5" x 5.07" each.

6.8 The projected light beams to each film chip can be individually changed in color by means of two (2) selector switches located in the [redacted] Control Panel as an aid in stereo photo interpretation. These colors are; red, green, blue and white.

General Illumination: With 3x obj — 10x wide eyepiece — 2x zoom.
Spot only — 160 - 300 app.

[redacted]

8.0 REPEATABILITY

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To determine repeatability of the equipment, the microscope crosshair is adjusted to be centered to a selected point on the test grid. Record reading. Move the "X" and "Y" axes off that point, and reposition carriages back to the same point. Record second reading. Repeat same procedure five (5) times. Care must be taken by the operator to center the target exactly every time, since the human error is included within this repeatability check.

9.0 Brightness Measurements: (Foot-Lamberts) through microscope.

Brightness full bulb general adjust at maximum:

Left Channel: with .10x objective. Zoom 2x . 10x [ ] eyepiece — 150
" 1x " 320

3x [ ] Obj Zoom 1x " " — 1,000
3x Zoom 2x " " — 650

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